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| 10/527,685 | 03/11/2005 | Philippe Mazabraud | 266829US6PCT | 7312 |

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| EXAMINER | |
|---|---|
| THROWER, LARRY W | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1791 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 02/25/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/527,685 | MAZABRAUD ET AL. | |
| | Examiner | Art Unit | |
| | LARRY THROWER | 1791 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2008*.

2a)☒ This action is FINAL. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-10 and 12-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-10 and 12-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

*Response to Amendment*

1. The amendment filed December 2, 2008 has been entered. Claims 7 is amended, claim 11 is cancelled, and claims 13-14 are added. Claims 7-10 and 12-14 are under examination.

*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7-8, 11-12 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carrow *et al.* (US 3,976,821) in view of Spencer, Martin (GB 2288359) as evidenced from Applicant's own disclosure or Strebel (US 6,083,434).

- With respect to claims 7 and 13-14, Carrow *et al.* discloses a method for rotationally molding a part including at least one first layer, made of a compact polymer and a second layer made of a polymer, surrounded on at least one face by the first layer. The method comprises placing a first quantity of material to make up the first layer in mold, rotating the mold to form the first layer and heating the first quantity of material to melt it, and then placing a second quantity of powder material to make up the second layer in the mold and restarting rotation of the mold. The mold continues to

rotate once it is removed from the oven and continues to rotate as it cools (col. 3 lines 31 – 51, col. 6 lines 6 - 58, and col. 7 lines 1 - 17). While Carrow *et al.* does not explicitly teach the second layer to be a foamable polymer, such is taken to be the case as evidence from Applicant's own disclosure (page 2 line 15 to page 3 line 5) or Strebel (col. 1 lines 36-50).

- Carrow *et al.* discloses interrupting the heating of the mold at a temperature above the melting point of the 2nd polymer (col. 7 lines 5 – 8), but fails to specifically disclose an interruption in heating before the second quantity of material reaches its foaming temperature. However, Spencer, drawn to a rotational molding process of a type taught by Carrow *et al*, discloses that it is preferred to remove the mold from the oven just before point C of the operating temperature to avoid over processing and allowing thermal inertia to then carry the materials in the mold to the final point C, thus forming the second layer (pg 9 lines 7-11; figure 3). Moreover, it is a common practice in the art to heat-activate a foamable polymeric such that it is NOT over-processed (i.e. over-heated) to avoid what is known in the art as "pop corn" effect. Therefore, it would have been obvious in the art at the time the invention was made, practicing the rotational molding method of Carrow *et al.*, to interrupt the heating before it reaches a foaming temperature and to allow the thermal inertia to carry out the heat to an activation temperature of a foamable polymer in order to avoid over-processing the foamable polymer thereby ensuring that the so-called "pop corn" effect during a foaming operation would not occur. An additional incentive for one in the art to interrupt the heating operation before it reaches a foaming temperature

and use its thermal inertia would have simply been to obtain the self-evident advantage of reducing the energy cost by having a shorter in-oven cycle time which would yield substantial savings in energy costs.

- With respect to claim 8 as applied to claim 7 as above, Spencer *et al.* discloses wherein the heating is interrupted just before the mold reaches its foaming temperature, thus allowing thermal inertia to then carry the materials in the mold to the foaming temperature (pg 9 lines 7 -11). It would be obvious to one skilled in the art at the time of the invention to remove the material at a predetermined temperature as disclosed by Spencer, depending on the chosen material used for the process. Different material will yield a different foaming temperature thus yielding a different pre foaming temperature removing point.
- With respect to claim 11 as applied to claim 7 as above, Carrow *et al.* in view of Spencer, Martin discloses making parts including at least one first layer made of a compact polymer, surrounding a second layer made of foam and possibly other layers, wherein the process is able to control foaming by rotationally molding the foam layer. It would be obvious to one skilled in the art at the time of the invention to use this process to create a part including concavity in which the mold would be provided without a concavity molding contour do to the controllability of the foam.
- With respect to claim 12 as applied to claim 7 as above, Carrow *et al.* discloses that solid particles of a different polymer are used for each layer (abstract).

4. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carrow *et al.* (US 3,976,821) in view of Spencer, Martin (GB 2288359) as evidence from Applicant's own disclosure or Strebel (US 6,083,434) as applied to claim 7, and in further view of Gilman, Jr. (US 4,836,963).

- With respect to claim 9 as applied to claim 7 as above, Carrow *et al.* discloses rotationally molding a multilayered article (col. 1 lines 4-6), but failes to teach providing an additional layer. However, it would have been obvious to one of ordinary skilled in the art at the time of the invention that the method of Carrow *et al*, because it is common practice in the art of rotational molding to repeat the initial process to create another layer, thus resulting in a 3-layered article as exemplified in the teachings of Gilman, Jr. (abstract; figure 1). All that would have been required would be to create another layer by repeating the disclosed method in order to form a desired number of layers for a resultant end product.
- With respect to claim 10 as applied to claim 9 as above, Gilman, Jr. discloses that there are many variations possible in rotational molding, including the use of other heating methods (col. 2 lines 10 -11). Gilman, Jr. also discloses that after the temperature level inside the mold cavity has risen and a portion of the molded laminate has been formed, such portion of the laminate can act as an insulation barrier to maintain the heat. The mold assembly is removed prior to the completion of the coalescing of such subsequent charge such that coalescing of such subsequent charge such that cooling of the mold assembly can begin even while coalescing of such subsequent charge is in progress (col. 3 lines 5 - 39). It would

have been obvious to one skilled in the art at the time the invention was made to have incorporated the heating method of Gilman, Jr. into the rotational molding process of Carrow *et al.* It would have been obvious to one of ordinary skill in the art at the time the invention was made to have removed the mold from the oven before melting and allowing the insulation and heat of the already formed layers to maintain until melting occurs. Shortening the in-oven cycle time would yield substantial savings in energy costs (col. 2 lines 54-55).

*Response to Arguments*

1. Applicant's arguments filed December 2, 2008 have been fully considered but they are not persuasive.

2. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

3. Applicant argues that the secondary reference (Spencer) "...does not teach to interrupt a heating of a foamable polymer layer before the foaming temperature and to rely upon the thermal inertia for achieving a controlled degree of foaming." This argument has been considered but is not persuasive. The 103(a) rejection above is based on the primary reference's (Carrow *et al.*'s) disclosure of rotomolding foamable polymer layers; Spencer is applied as teaching that it is preferred to interrupt heating

and allow thermal inertia to carry materials in the mold to their target temperature. Together, the references make clear it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to arrive at the claimed invention.

4. Applicant further argues that Spencer is "...not at all concerned with foamable polymers, and never mentions them." This argument has been considered but is not persuasive. Again, the rejection is based on the combination of the teachings of Carrow *et al.* and Spencer. While Carrow *et al.* does not explicitly teach the second layer to be a foamable polymer, such is taken to be the case as evidence from Applicant's own disclosure (page 2 line 15 to page 3 line 5) or Strebel (col. 1 lines 36-50).

5. Applicant further argues that Spencer suggests cooling immediately so that no significant foaming might occur, pointing to page 9 and figure 3. The Examiner finds no support for this assertion in Spencer.

6. Applicant further argues that Spencer only teaches avoiding overprocessing/degradation of the first layer, not the second. This argument has been considered but is not persuasive. As noted above, Spencer is applied as teaching that it is preferred to interrupt heating and allow thermal inertia to carry materials in the mold to their target temperature. Avoiding overprocessing of either layer would clearly be desirable and obvious from the teachings of Spencer.

7. Applicant further argues that the "pop corn effect" is only known for polymers in the electronic arts, not rotomolding. This argument has been considered but is not persuasive. A person of ordinary skill is presumed to have the ability to select and

utilize knowledge from other arts that are reasonably pertinent. *In re Antle*, 444 F.2d 1168, 1171-72, 58 CCPA 1382, 170 USPQ 285, 287-88 (CCPA 1971).

8. Applicant finally argues that "...the claimed method is directed to improving the foaming characteristics and not to sparing energy." The fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Oblaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

*Conclusion*

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LARRY THROWER whose telephone number is 571-270-5517. The examiner can normally be reached on Monday through Friday from 9:30AM-6PM est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina A. Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Larry Thrower/
Examiner, Art Unit 1791

/Christina Johnson/

Supervisory Patent Examiner, Art Unit 1791